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10/606,160	06/25/2003	Albert Chungbor Wan	1033-T00517	3573

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EXAMINER	
HO, CHUONG T	
ART UNIT	**PAPER NUMBER**
2616	

DATE MAILED: 09/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/606,160	WAN ET AL.	
	Examiner	Art Unit	
	CHUONG T. HO	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6,8-24 and 26-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-24 and 26-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 June 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The amendment filed 06/27/06 have been entered and made of record.

2. Applicant's arguments filed 06/27/06 have been fully considered but they are not persuasive.

In the page 2, lines 9-13, the applicant alleged that "neither Nguyen nor Richardson disclose or suggest a broadcast overlay network having a ring topology, as recited in claim 1, from which claims 6, 9, 10 and 14 depend, and claim 19, from which claims 24, 27, 28, and 32 depend. Further, neither Nguyen nor Richardson disclose or suggest the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited in claims 1, 6, 9, 10, 14, 19, 24, 27, 28 and 32".

The examiner disagrees and indicates that Nguyen discloses or suggests a broadcast overlay network having a ring topology, as recited in claim 1, from which claims 6, 9, 10 and 14 depend, and claim 19, from which claims 24, 27, 28, and 32 depend, and claim 19, from which claims 24, 27, 28, and 32 depend (see Nguyen, U.S.Patent No. 2004/0117503 A1, see figure 1, IP multicast connections in a network by receiving, at a network node); Nguyen discloses or suggest the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited in claims 1, 6, 9, 10, 14, 19, 24, 27, 28 and 32 (see page 2, [0020] DSLAM, page 1, [0007], the solution disclosed in the application is to first determine if there is enough bandwidth available to complete the Join operation).

In the page 3, lines 10-16, the applicant alleged that "Nguyen and Richardson fail to disclose or suggest a broadcast overlay network having ring topology to carry broadcast traffic from a head-end network, as recited in claims 2-4 and 20-22.

The examiner disagrees and indicates Nguyen and Richardson discloses or suggests a broadcast overlay network having ring topology to carry broadcast traffic from a head-end network, as recited in claims 2-4 and 20-22 (see Nguyen, U.S.Patent No. 2004/0117503 A1, see figure 1, IP multicast connections in a network by receiving, at a network node); Nguyen discloses or suggest the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited in claims 1, 6, 9, 10, 14, 19, 24, 27, 28 and 32 (see page 2, [0020] DSLAM, page 1, [0007], the solution disclosed in the application is to first determine if there is enough bandwidth available to complete the Join operation).

In the page 3, lines 6-7, the applicant alleged that "Christian has nothing to do with IP multicasting.

The examiner disagrees and indicates Christina has to do with IP multicasting (see page 1, [0013], page 3, [0044], IP, broadcast).

In the page 3, lines 13-16, the applicant alleged that "Christian does not disclose or suggest a broadcast overlay network having a ring topology to carry broadcast traffic from a head-end network as recited in claims 2-4 and 20-22, nor does Christian discloses or suggest a DSLAM determining an available of a particular video channel

based on a group address provided by a request from customer premises via the line interface, as recited in claims 2-4, and 20-22.

The examiner disagrees and indicates Chistina discloses or suggests a broadcast overlay network having a ring topology to carry broadcast traffic from a head-end network as recited in claims 2-4 and 20-22, nor does Christian discloses or suggest a DSLAM (see page 1, [0006], broadcast/multicast) (see page 1, [0010], DSLAM). Nguyen discloses or suggest a DSLAM determining an available of a particular video channel based on a group address provided by a request from customer premises via the line interface, as recited in claims 2-4, and 20-22 (see Nguyen, U.S.Patent No. 2004/0117503 A1, see figure 1, IP multicast connections in a network by receiving, at a network node); Nguyen discloses or suggest the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited in claims 1, 6, 9, 10, 14, 19, 24, 27, 28 and 32 (see page 2, [0020] DSLAM, page 1, [0007], the solution disclosed in the application is to first determine if there is enough bandwidth available to complete the Join operation).

In the page 4, lines 2-3, Kenworthy, therefore, does nothing to overcome the lack of motivation to combined Nguyen and Richardson with Christian. In fact, by teaching the use of SONET networks to transmit content up to, but not including the local or central office delivery to subscribers".

The examiner disagrees and indicates including the local or central office delivery to subscribers (see Kenworthy, figure 1, central office 114).

In the page 4, the applicant alleged that the asserted combination also fails to disclose or suggest a broadcast network comprising a first SONET ring having an ingress ADM and a second SONET ring having an egress ADM connected to the network interface of a DSLAM, as recited in claims 5, 23.

The examiner disagrees and indicates Christian discloses the SONET ring having the ingress ADM, the egress ADM connected to the network interface of the DSLAM (see figure 1, (see col. 7, lines 15-17). Kenworthyt discloses the at least one SONET ring comprises a plurality of SONET rings connected by at least one cross connect element, the plurality of SONET rings (figure 1, interconnect long haul fiber optic network) comprising a first SONET ring (figure1, fiber optic network 107) and a second SONET ring (figure 1, fiber optic network 113). Nguyen discloses or suggests the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface (see page 1, [0006] [0011]).

In the page 5, lines 11-16, the applicant alleged that "Dunn does not teach or suggest a broadcast overlay network having a ring topology to carry broadcast traffic from a head-end network and in communication with a network interface of a DSLAM determining an available of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited by claim 13 and 31.

The examiner disagrees and indicates the asserted combination teach or suggest a broadcast overlay network having a ring topology to carry broadcast traffic

from a head-end network and in communication with a network interface of a DSLAM determining an available of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited by claim 13 and 31 (see Nguyen, page 1, [0006] [0011]).

In the page 5, lines 23-29, the applicant alleged that "an asserted combination including Nguyen, Richardson and Kenworthy fails to discloses or suggest a broadcast overlay network having a ring topology to carry broadcast traffic from a head-end network and in combination with a network interface of a DSLAM as recited in claims 11, 12, 15, 16, 29, 30, 33, and 34. Additionally, the asserted combination fails to disclose or suggest the DSLAM determining an available of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited by claims 11, 12, 15, 16, 29, 30, 33, and 34.

The examiner disagrees and indicates an asserted combination including Nguyen, Richardson and Kenworthy disclose or suggest a broadcast overlay network having a ring topology to carry broadcast traffic from a head-end network and in combination with a network interface of a DSLAM as recited in claims 11, 12, 15, 16, 29, 30, 33, and 34 (Nguyen discloses or suggests the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface (see page 1, [0006] [0011]).

In the page 5, the applicant alleged that "Kristofek does not teach or suggest a broadcast overlay network having a ring topology to carry broadcast traffic from a head-

end network and in communication with network interface of a DSLAM as recited in claims 8, 26, 37,-41 and 44-46".

The examiner disagree and indicate Kristofed teaches or suggest a broadcast overlay network having a ring topology to carry broadcast traffic from a head-end network and in communication with network interface of a DSLAM as recited in claims 8, 26, 37,-41 and 44-46 (see page 1, [0006], broadcast / multicast, page 1, [0010], DSLAM).

In the page 6, lines 1-3, the applicant alleged that "Kristofek fails to disclose or suggest the DSLAM determining an availability of a particular video channel based on a class-D IP address by a request from customer premise via the line interface".

The examiner disagrees and indicates the DSLAM determining an availability of a particular video channel based on a IP address by a request from customer premise via the line interface (see Nguyen, U.S.Patent No. 2004/0117503 A1, see figure 1, IP multicast connections in a network by receiving, at a network node); Nguyen discloses or suggest the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited in claims 1, 6, 9, 10, 14, 19, 24, 27, 28 and 32 (see page 2, [0020] DSLAM, page 1, [0007], the solution disclosed in the application is to first determine if there is enough bandwidth available to complete the Join operation) (see Kristofed, page 4, [0055], class D address).

In the page 6, lines 21-23, the applicant alleged that Christian also does not cure the failure of Nguyen, Richardson and Fristofed to disclose or suggest the DSLAM

determining an availability of particular video channel base on a class-D IP address provided by a request from a customer premise via the line interface, as recited by claims 35, 36, 42, and 43".

The examiner respectfully disagree and indicates Nguyen, Richardson and Fristofed to disclose or suggest the DSLAM determining an availability of particular video channel base on a class-D IP address provided by a request from a customer premise via the line interface, as recited by claims 35, 36, 42, and 43 (see Nguyen, U.S.Patent No. 2004/0117503 A1, see figure 1, IP multicast connections in a network by receiving, at a network node); Nguyen discloses or suggest the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface, as recited in claims 1, 6, 9, 10, 14, 19, 24, 27, 28 and 32 (see page 2, [0020] DSLAM, page 1, [0007], the solution disclosed in the application is to first determine if there is enough bandwidth available to complete the Join operation) (see Kristofed, page 4, [0055], class D address).

In the page 6, lines 26-28, Applicants respectfully traverse the rejection of claims 17 and 18 under 35 U.S.C. 103 (a) over Nguyen, Richardson, Kenworthy and Christian. See Office Action, p. 30, paragraph 48. As previously discussed, the asserted combination is improper. Even, if made, the asserted combination fails to disclose at least one element of claims 17 and 18, for at least the reasons presented above in paragraph 3, 4, 5, and 7.

The examiner disagrees and indicates Christian discloses the SONET ring having the ingress ADM, the egress ADM connected to the network interface of the

DSLAM (see figure 1, (see col. 7, lines 15-17). Kenworthyt discloses the at least one SONET ring comprises a plurality of SONET rings connected by at least one cross connect element, the plurality of SONET rings (figure 1, interconnect long haul fiber optic network) comprising a first SONET ring (figure1, fiber optic network 107) and a second SONET ring (figure 1, fiber optic network 113). Nguyen discloses or suggests the DSLAM determining an availability of a particular video channel based on a group address provided by a request from a customer premise via the line interface (see page 1, [0006] [0011]).

3. Claims 1-6, 8-16, 17-24, 26-46 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 6, 9, 10, 14, 19, 24, 27, 28, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nguyen et al. (U.S.Patent No. 2004/0117503) in view of Richardson et al. (U.S.Patent No. 2004/0125818 A1).

In the claim 1, Nguyen et al. discloses a broadcast overlay network (ATM network) having a ring topology to carry broadcast (multicast) traffic from a head-end network (see page 2, [0020], a video head end provides statically configured channels to a DSL access multiplexer (DSLAM) via an ATM network. The video channel are

dynamically cross-connected to customer premise equipment (CPE) units as IP multicast video connections over ATM. Each CPE unit performs IPoATM to IP interfacing to provide IP multicasted video channels to one or more set-top boxes (STB). Each STB sends IGMP messages to the DSLAM to effect certain actions, such as joining or leaving a multicast group); comprising:

- A digital subscriber line access multiplexer (DSLAM) receives a request for a particular video channel from a customer premise (STB1, STB2, ..., STBn) (see figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);
- Wherein the DSLAM is further to determine an availability of the particular video channel based on a group address (MAC addess) by the request (see page 3, [0022], whenever a DSLAM at a network node receives a Group Join message, it compares the media access control (MAC) address of the originating STB to that of previous Leave message for which there are existing connections, i.e. pending Leave requests. If a match is found and "an available" no other STB is listening to the multicast group that has the matching pending leave).

However, Nguyen et al. are silent to disclosing a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the

particular video channel from the network interface to the line interface (see page 2, [0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel, illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28).

Both Nguyen, and Richardson discloses multicasting for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Nguyen with the teaching of Richardson to provide a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

5. In the claim 6, Nguyen discloses the request comprises an Internet Group Management Protocol (IGMP) request message (see page 1, [0003] the internet group management protocol (IGMP)....relates to the communication between the router and the subscriber, which is often referred to as a host) (see page 3, [0022], whenever a DSLAM at a network node receives a Group Join message, it compares the media

access control (MAC) address of the originating STB to that of previous Leave message for which there are existing connections, i.e. pending Leave requests. If a match is found and "an available" no other STB is listening to the multicast group that has the matching pending leave).

6. In the claim 9, Nguyen discloses the broadcast traffic comprises Internet Protocol (IP) multicast envelopes (see page 2, [0020], The video channels are dynamically cross-connected to customer premise equipment (CPE) units as IP multicast video connections over ATM. Each CPE unit performs IPoATM to IP interfacing to provide IP multicasted video channels to one or more set-top boxes (STB). Each STB sends IGMP messages to the DSLAM to effect certain actions, such as joining or leaving a multicast group).

7. In the claim 10, Nguyen discloses where the DSLAM is further to receive, from the customer premise, a unicast request for a destination in the head-end network, and to deliver the unicast request to a legacy xDSL data network (see figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);

However, Nguyen is silent to disclosing the DSLAM receive a unicast request from the customer premise via the line interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the particular video channel from the network interface to the line interface (see page 2,

[0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel, illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28).

Both Nguyen, and Richardson discloses multicasting for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Nguyen with the teaching of Richardson to provide a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

8. In the claim 14, claim 14 is rejected the same reason of claim 10 above.

9. In the claim 19, Nguyen et al. discloses a broadcast overlay network (ATM network) having a ring topology to carry broadcast (multicast) traffic from a head-end network (see page 2, [0020], a video head end provides statically configured channels to a DSL access multiplexer (DSLAM) via an ATM network. The video channel are dynamically cross-connected to customer premise equipment (CPE) units as IP

multicast video connections over ATM. Each CPE unit performs IPoATM to IP interfacing to provide IP multicasted video channels to one or more set-top boxes (STB). Each STB sends IGMP messages to the DSLAM to effect certain actions, such as joining or leaving a multicast group); comprising:

- A digital subscriber line access multiplexer (DSLAM) receives a request for a particular video channel from a customer premise (STB1, STB2, ..., STBn) (see figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);
- Wherein the DSLAM is further to determine an availability of the particular video channel based on a group address (MAC addess) by the request (see page 3, [0022], whenever a DSLAM at a network node receives a Group Join message, it compares the media access control (MAC) address of the originating STB to that of previous Leave message for which there are existing connections, i.e. pending Leave requests. If a match is found and "an available" no other STB is listening to the multicast group that has the matching pending leave).

However, Nguyen et al. are silent to disclosing a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the particular video channel from the network interface to the line interface (see page 2,

[0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel, illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28). Both Nguyen, and Richardson discloses multicasting for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Nguyen with the teaching of Richardson to provide a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

10. In the claim 24, claim 24 is rejected the same reason of claim 6 above.

11. In the claim 27, claim 27 is rejected the same reason of claim 9 above.

12. In the claim 28, claim 28 is rejected the same reason of claim 10 above.

13. In the claim 32, claim 32 is rejected the same reason of claim 10 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 2-4, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Nguyen – Richardson) in view of Christian et al. (U.S.6,892,233 B1).

In the claim 2, the combined system (Nguyen – Richardson) discloses the limitations of claim 1 above.

However, the combined system (Nguyen – Richardson) are silent to disclosing the overlay network comprises at least one synchronous optical network (SONET) ring. Christian et al. discloses the overlay network comprises at least one synchronous optical network (SONET) ring (see figure 2).

Both Nguyen, Richardson, and Christian disclose establishing a data connection between the remote management unit and the remote access function. Christian recognizes the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Christian to provide the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM) in order to control the set-up and functionally of either directly connected or remote peripheral equipment within SONET/SDH environment.

15. In the claim 3, the combined system (Nguyen – Richardson) discloses the limitations of claim 2 above.

However, the combined system (Nguyen – Richardson) are silent to disclosing the at least one SONET ring comprises an ingress add-drop multiplexer (ADM) to receive the broadcast traffic from the head-end network.

Christian discloses the SONET ring comprising an ingress Add-Drop multiplexer (ADM) (see figure 2, 116) and egress Add-Drop multiplexer (ADM) (see figure 2, 106) (see col. 7, lines 58-59, the peripheral equipment 106 is connected to SONET/SDH ring architecture supporting other interconned ADMs 114-116).

Both Nguyen, Richardson, and Christian disclose establishing a data connection between the remote management unit and the remote access function. Christian recognizes the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Christian to provide the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM) in order to control the set-up and functionally of either directly connected or remote peripheral equipment within SONET/SDH environment.

16. In the claim 4, the combined system (Nguyen – Richardson) discloses the limitations of claim 3 above.

However, the combined system (Nguyen – Richardson) are silent to disclosing the at least one SONET ring comprises a plurality of egress ADMs including an egress ADM connected to the network interface of the DSLAM.

Christian discloses the at least one SONET ring comprises a plurality of egress ADMs including an egress ADM (figure 1, 14, 18, 20) connected to the network interface of the DSLAM (figure 1, Peripheral 36) (see col. 7, lines 15-17).

Both Nguyen, Richardson, and Christian disclose establishing a data connection between the remote management unit and the remote access function. Christian recognizes the at least one SONET ring comprises a plurality of egress ADMs including an egress ADM connected to the network interface of the DSLAM. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Christian to provide the at least one SONET ring comprises a plurality of egress ADMs including an egress ADM connected to the network interface of the DSLAM in order to control the set-up and functionally of either directly connected or remote peripheral equipment within SONET/SDH environment.

17. In the claim 20, claim 20 is rejected the same reason of claim 2 above.

18. In the claim 21, claim 21 is rejected the same reason of claim 3 above.

19. In the claim 22, claim 22 is rejected the same reason of claim 4 above.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. Claims 5, 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Nguyen – Richardson – Christian) in view of Kenworthy (U.S. Patent No. 6,718,553).

In the claim 5, Christian discloses the SONET ring having the ingress ADM, the egress ADM connected to the network interface of the DSLAM (see figure 1, (see col. 7, lines 15-17).

However, the combined system (Nguyen – Richardson – Christian) are silent to disclosing the at least one SONET ring comprises a plurality of SONET rings connected by at least one cross connect element, the plurality of SONET rings comprising a first SONET ring and a second SONET ring.

Kenworthyt discloses the at least one SONET ring comprises a plurality of SONET rings connected by at least one cross connect element, the plurality of SONET rings (figure 1, interconnect long haul fiber optic network) comprising a first SONET ring (figure1, fiber optic network 107) and a second SONET ring (figure 1, fiber optic network 113).

Both Nguyen, Richardson, Christian, and Kenworthy disclose broadcast video (or audio) programs). Kenworthy recognizes the at least one SONET ring comprises a plurality of SONET rings connected by at least one cross connect element (see col. 8, lines 45-47), the plurality of SONET rings comprising a first SONET ring and a second SONET ring. Thus, it would have been obvious to one of ordinary skill in the art at the

time of the invention to modify the combined system (Nguyen – Richardson – Christian) with the teaching of Kenworthy to provide the at least one SONET ring comprises a plurality of SONET rings connected by at least one cross connect element, the plurality of SONET rings comprising a first SONET ring and a second SONET ring in order to deliver of digital aggregated content bundle to subscribers in multiple markets via closed wide area network derived from available fiber optic assets.

22. In the claim 23, claim 23 is rejected the same reason of claim 5 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

23. Claims 11, 12, 15, 16, 29, 30, 33, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Nguyen – Richardson) in view of Kenworthy (U.S. Patent No. 6,718,553).

In the claim 11, the combined system (Nguyen – Richardson) discloses wherein the DSLAM is further to receive, from the customer premise via the line interface, a unicast request for a destination in the head-end network, and deliver the unicast request to a dedicated data network.

However, the combined system (Nguyen – Richardson) are silent to disclosing a dedicated data network separate from the broadcast overlay network and separate from a legacy xDSL data network.

Kenworthyt discloses dedicated data network (figure 1, interconnected long haul fiber optic network 110) separate from the broadcast overlay network (figure 1, head-end network) and separate from a legacy xDSL data network (figure 1, market A, market B, market C).

Both Nguyen, Richardson, and Kenworthy disclose broadcast video (or audio) programs). Kenworthy recognizes dedicated data network separate from the broadcast overlay network and separate from a legacy xDSL data network. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Kenworthy to provide dedicated data network separate from the broadcast overlay network and separate from a legacy xDSL data network in order to deliver of digital aggregated content bundle to subscribers in multiple markets via closed wide area network derived from available fiber optic assets.

24. In the claim 12, the combined system (Nguyen – Richardson) discloses the limitations of claim 11 above.

However, the combined system (Nguyen – Richardson) are silent to disclosing the dedicated data network comprises a virtual private network (VPN).

Kenworthy discloses the dedicated data network comprises a virtual private network (see col. 11, lines 22-25, The local integration headend 115 may also send and receive data to and from the Internet backbone 324 via a data router 326. Although reference is made to the Internet backbone 324, those skilled in the art will appreciate that and data network may be employed, such as a virtual private network, a private

network, etc. Data received from the data router is also provided to the integration function 308.)

Both Nguyen, Richardson, and Kenworthy disclose broadcast video (or audio) programs). Kenworthy recognizes the dedicated data network comprises a virtual private network (VPN). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Kenworthy to provide the dedicated data network comprises a virtual private network (VPN) in order to deliver of digital aggregated content bundle to subscribers in multiple markets via closed wide area network derived from available fiber optic assets.

25. In the claim 15, the combined system (Nguyen – Richardson) discloses the DSLAM is to receive the unicast traffice (see Nguyen, page 2, [0020] a video head end provides statistically configured channels to DSL access multiplexer (DSLAM). However, the combined system (Nguyen – Richardson) are silent to disclosing the DSLAM is to receive the unicast traffic via a legacy xDSL data network. Kenworthy discloses DSLAM is to receive the unicast traffic via a legacy xDSL data network (see fig.1, col. 7, lines 33-35, market A, market B, market C, the central offices 114 can house equipment for handling last-mile delivery 114 and dissemination of the digital aggregated content bundle to the subscribers premises 116).

Both Nguyen, Richardson, and Kenworthy disclose broadcast video (or audio) programs). Kenworthy recognizes DSLAM is to receive the unicast traffic via a legacy xDSL data network. Thus, it would have been obvious to one of ordinary skill in the art

at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Kenworthy to provide DSLAM is to receive the unicast traffic via a legacy xDSL data network in order to deliver of digital aggregated content bundle to subscribers in multiple markets via closed wide area network derived from available fiber optic assets.

26. In the claim 16, claim 16 is rejected the same reason of claim 12 above.

27. In the claim 29, claim 29 is rejected the same reason of claim 11 above.

28. In the claim 30, claim 30 is rejected the same reason of claim 12 above.

29. In the claim 33, claim 33 is rejected the same reason of claim 15 above.

30. In the claim 34, claim 34 is rejected the same reason of claim 16 above.

Claim Rejections - 35 USC § 103

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

32. Claims 13, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Nguyen – Richardson) in view of Kenworthy (U.S.Patent No. 6,718,553 B2) and in further view of Dunn et al. (U.S.Patent No. 6,118,780).

In the claim 13, the combined system (Nguyen – Richardson) discloses wherein the DSLAM receive a unicast request from the customer premise for a destination in the head-end network (see Nguyen, page 2, [0022]).

However, the combined system (Nguyen – Richardson) is silent to disclosing the dedicated data network separate from the broadcast overlay network and the legacy xDSL data network.

Kenworthy discloses the dedicated data network (fig.1, 110) separate from the broadcast overlay network (fig.1, 106) and the legacy xDSL data network (fig.1, market A, market b, market c, central office 114 (DSLAM))

Both Nguyen, Richardson, and Kenworthy disclose broadcast video (or audio) programs). Kenworthy recognizes dedicated data network separate from the broadcast overlay network and separate from a legacy xDSL data network. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Kenworthy to provide dedicated data network separate from the broadcast overlay network and separate from a legacy xDSL data network in order to deliver of digital aggregated content bundle to subscribers in multiple markets via closed wide area network derived from available fiber optic assets.

However, the combined system (Nguyen – Richardson – Kenworthy) is silent to disclosing to deliver the unicast request to one of a legacy xDSL data network and a dedicated data network based on policy decision.

Dunn et al. discloses to deliver the message to data network 20 and a dedicated data network 24 based on policy decision of the local telephone company (see col. 4, lines 24-26).

Both Nguyen, Richardson, Kenworthy, and Dunn disclose DSLAM, Dunn recognizes to deliver the message to data network 20 and a dedicated data network 24 based on policy decision of the local telephone company. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson – Kenworthy) with the teaching of Dunn to deliver the unicast request to one of a legacy xDSL data network and a dedicated data network based on policy decision in order to improve special service provided by the PSTN.

33. In the claim 31, claim 31 is rejected the same reason of claim 13 above.

Claim Rejections - 35 USC § 103

34. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

35. Claims 8, 26, 37-41, 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over * Nguyen et al. (U.S.Patent No. 2004/0117503) in view of Richardson et al. (U.S.Patent No. 2004/0125818 A1) and in further view of Kristofek (US. Patent No. 2004/0088735).

In the claim 8, Nguyen et al. discloses a broadcast overlay network (ATM network) having a ring topology to carry broadcast (multicast) traffic from a head-end network (see page 2, [0020], a video head end provides statically configured channels to a DSL access multiplexer (DSLAM) via an ATM network. The video channel are dynamically

cross-connected to customer premise equipment (CPE) units as IP multicast video connections over ATM. Each CPE unit performs IPoATM to IP interfacing to provide IP multicasted video channels to one or more set-top boxes (STB). Each STB sends IGMP messages to the DSLAM to effect certain actions, such as joining or leaving a multicast group); comprising:

- A digital subscriber line access multiplexer (DSLAM) receives a request for a particular video channel from a customer premise (STB1, STB2, ..., STBn) (see figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);
- Wherein the DSLAM is further to determine an availability of the particular video channel based on a group address (MAC addess) by the request (see page 3, [0022], whenever a DSLAM at a network node receives a Group Join message, it compares the media access control (MAC) address of the originating STB to that of previous Leave message for which there are existing connections, i.e. pending Leave requests. If a match is found and "an available" no other STB is listening to the multicast group that has the matching pending leave).

However, Nguyen et al. are silent to disclosing a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the

particular video channel from the network interface to the line interface (see page 2, [0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel, illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28).

Both Nguyen, and Richardson discloses multicasting for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Nguyen with the teaching of Richardson to provide a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

However, the combined system (Nguyen – Richardson) are silent to disclosing a class-D Internet Protocol (IP) address provided by the request.

Kristofek discloses a class-D internet Protocol (IP) address provided by the request (see page 4, [0055], the STB 202 sends an IGMP report in step 212. The report may comprise, for example, a source IP address, such as an IP of video stream,....a

destination address, such as a class D address of channel (e.g. 225.0.0.7, channel 7)....Through this message sequence, the join request is initiated).

Both Nguyen, Richardson, and Kristofek discloses multicasting for delivering information over network. Kristofek recognizes a class-D Internet Protocol (IP) address provided by the request. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Kristofek to provide a class-D Internet Protocol (IP) address provided by the request in order to provide broadcast content quickly exhausts inter-nodal interface bandwidth capacity. Therefore, the combined system would have been enable to share bandwidth capacity. among channels.

36. In the claim 37, Nguyen discloses the request comprises an Internet Group Management Protocol (IGMP) request message (see page 1, [0003] the internet group management protocol (IGMP)....relates to the communication between the router and the subscriber, which is often referred to as a host) (see page 3, [0022], whenever a DSLAM at a network node receives a Group Join message, it compares the media access control (MAC) address of the originating STB to that of previous Leave message for which there are existing connections, i.e. pending Leave requests. If a match is found and "an available" no other STB is listening to the multicast group that has the matching pending leave).

37. In the claim 38, Nguyen discloses the broadcast traffic comprises Internet Protocol (IP) multicast envelopes (see page 2, [0020], The video channels are dynamically cross-connected to customer premise equipment (CPE) units as IP

multicast video connections over ATM. Each CPE unit performs IPoATM to IP interfacing to provide IP multicasted video channels to one or more set-top boxes (STB). Each STB sends IGMP messages to the DSLAM to effect certain actions, such as joining or leaving a multicast group).

38. In the claim 39, Nguyen discloses where the DSLAM is further to receive, from the customer premise, a unicast request for a destination in the head-end network, and to deliver the unicast request to a legacy xDSL data network (see figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);

However, Nguyen is silent to disclosing the DSLAM receive a unicast request from the customer premise via the line interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the particular video channel from the network interface to the line interface (see page 2, [0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel, illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28).

Both Nguyen, and Richardson discloses multicasting for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM)

having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Nguyen with the teaching of Richardson to provide a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

39. In the claim 40, Nguyen discloses where the DSLAM is further to receive, from the customer premise, a unicast request for a destination in the head-end network, and to deliver the unicast request to a legacy xDSL data network (see figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);

However, Nguyen is silent to disclosing the DSLAM receive a unicast request from the customer premise via the line interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the particular video channel from the network interface to the line interface (see page 2, [0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel,

illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28).

Both Nguyen, and Richardson discloses multicasting for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Nguyen with the teaching of Richardson to provide a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

40. In the claim 41, the combined system (Nguyen – Richardson) discloses the DSLAM is to receive the unicast traffice (see Nguyen, page 2, [0020] a video head end provides statistically configured channels to DSL access multiplexer (DSLAM). However, the combined system (Nguyen – Richardson) are silent to disclosing the DSLAM is to receive the unicast traffic via a legacy xDSL data network. Kenworthy discloses DSLAM is to receive the unicast traffic via a legacy xDSL data network (see fig.1, col. 7, lines 33-35, market A, market B, market C, the central offices

114 can house equipment for handling last-mile delivery 114 and dissemination of the digital aggregated content bundle to the subscribers premises 116).

Both Nguyen, Richardson, and Kenworthy disclose broadcast video (or audio) programs). Kenworthy recognizes DSLAM is to receive the unicast traffic via a legacy xDSL data network. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the teaching of Kenworthy to provide DSLAM is to receive the unicast traffic via a legacy xDSL data network in order to deliver of digital aggregated content bundle to subscribers in multiple markets via closed wide area network derived from available fiber optic assets.

41. In the claim 26, Nguyen et al. discloses a broadcast overlay network (ATM network) having a ring topology to carry broadcast (multicast) traffic from a head-end network (see page 2, [0020], a video head end provides statically configured channels to a DSL access multiplexer (DSLAM) via an ATM network. The video channel are dynamically cross-connected to customer premise equipment (CPE) units as IP multicast video connections over ATM. Each CPE unit performs IPoATM to IP interfacing to provide IP multicasted video channels to one or more set-top boxes (STB). Each STB sends IGMP messages to the DSLAM to effect certain actions, such as joining or leaving a multicast group); comprising:

- A digital subscriber line access multiplexer (DSLAM) receives a request for a particular video channel from a customer premise (STB1, STB2, ..., STBn) (see

figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);

- Wherein the DSLAM is further to determine an availability of the particular video channel based on a group address (MAC addess) by the request (see page 3, [0022], whenever a DSLAM at a network node receives a Group Join message, it compares the media access control (MAC) address of the originating STB to that of previous Leave message for which there are existing connections, i.e. pending Leave requests. If a match is found and "an available" no other STB is listening to the multicast group that has the matching pending leave).

However, Nguyen et al. are silent to disclosing a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the particular video channel from the network interface to the line interface (see page 2, [0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel, illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28).

Both Nguyen, and Richardson discloses multicasting for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Nguyen with the teaching of Richardson to provide a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

However, the combined system (Nguyen – Richardson) are silent to disclosing a class-D Internet Protocol (IP) address provided by the request.

Kristofek discloses a class-D internet Protocol (IP) address provided by the request (see page 4, [0055], the STB 202 sends an IGMP report in step 212. The report may comprise, for example, a source IP address, such as an IP of video stream,....a destination address, such as a class D address of channel (e.g. 225.0.0.7, channel 7)....Through this message sequence, the join request is initiated).

Both Nguyen, Richardson, and Kristofek discloses multicasting for delivering information over network. Kristofek recognizes a class-D Internet Protocol (IP) address provided by the request. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson) with the

teaching of Kristofek to provide a class-D Internet Protocol (IP) address provided by the request in order to provide broadcast content quickly exhausts inter-nodal interface bandwidth capacity. Therefore, the combined system would have been enable to share bandwidth capacity. among channels.

In the claim 44, claim 44 is rejected the same reason of claim 37 above.

In the claim 45, claim 45 is rejected the same reason of claim 38 above.

In the claim 46, claim 46 is rejected the same reason of claim 39 above.

Claim Rejections - 35 USC § 103

42. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

43. Claims 35, 36, 42, 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Nguyen – Richardson – Kristofek) in view of Christian et al. (U.S.6,892,233 B1).

In the claims 35, the combined system (Nguyen – Richardson - Kristofek) discloses the limitations of claim 8 above.

However, the combined system (Nguyen – Richardson - Kristofek) are silent to disclosing the overlay network comprises at least one synchronous optical network (SONET) ring.

Christian et al. discloses the overlay network comprises at least one synchronous optical network (SONET) ring (see figure 2).

Both Nguyen, Richardson, Kristofek and Christian disclose establishing a data connection between the remote management unit and the remote access function. Christian recognizes the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson - Kristofek) with the teaching of Christian to provide the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM) in order to control the set-up and functionally of either directly connected or remote peripheral equipment within SONET/SDH environment.

44. In the claim 36, the combined system (Nguyen – Richardson) discloses the limitations of claim 8 above.

However, the combined system (Nguyen – Richardson - Kristofek) are silent to disclosing the at least one SONET ring comprises an ingress add-drop multiplexer (ADM) to receive the broadcast traffic from the head-end network.

Christian discloses the SONET ring comprising an ingress Add-Drop multiplexer (ADM) (see figure 2, 116) and egress Add-Drop multiplexer (ADM) (see figure 2, 106) (see col. 7, lines 58-59, the peripheral equipment 106 is connected to SONET/SDH ring architecture supporting other interconned ADMs 114-116).

Both Nguyen, Richardson, Kristofek, and Christian disclose establishing a data connection between the remote management unit and the remote access function.

Christian recognizes the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Nguyen – Richardson - Kristofek) with the teaching of Christian to provide the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM) in order to control the set-up and functionally of either directly connected or remote peripheral equipment within SONET/SDH environment.

45. In the claim 42, claim 42 is rejected the same reason of claim 35 above.

46. In the claim 43, claim 43 is rejected the same reason of claim 36 above.

Claim Rejections - 35 USC § 103

47. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

48. Claims 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kenworthy (U.S.Patent No. 6,718,553 B2) in view of Christian (U.S.Patent No. 6,892,233) and further view of Nguyen et al. (U.S.Patent No. 2004/0117503) and further view of Richardson et al. (U.S.Patent No. 2004/0125818 A1)..

In the claim 17, Kenworthyt discloses a broadcast overlay network having a ring topology to carry traffic from a head-end network (see figure 1, centralized content aggregation Headend 102), the broadcast overlay network (see abstract, system and end-to-end methods for delivering digital aggregated broadcast television program from

centralized aggregation headend to subscriber in multiple markets using an interconnected terrestrial fiber optic network (SONET)) comprising a plurality of synchronous optical network (SONET) rings (see figure 1, fiber optic network 107, local/metro fiber optic system 113) connected by at least one cross connect element (see col. 8, lines 45-46, The digital aggregated content bundle can be transported long-haul via point to point connections, redundant loop connections or via interconnected networking that will support stable cross connections at L/M PoPs 112), the plurality of SONET rings comprising a first SONET ring and a second ring, the first SONET ring (see figure 1, fiber optic network 107) and a second SONET ring (see figure 1, fiber optic network 113); the plurality of SONET rings (figure 1, fiber optic network 107) comprising ingress IPOP 109 (see figure 1) to receive the broadcast traffic from the headend network (see figure 1, abstract) and plurality of egress IPOP 109) a dedicated data network (figure 1, interconnected long haul fiber optical network) separate from the broadcast overlay network (figure 1, headend network 106) and a legacy xDSL data network (figure 1, market A, B, C); a digital subscriber line access multiplixer (DSLAM) (figure 1, central office 114) communicates with the second SONET ring (figure 1, local /metro fiber optic system 113), and the DSLAM further (fig.1, central office 114) further to receive message from the head-end network via the dedicated data network (fig.1, interconnected long haul fiber optic network 110) and deliver a message to the customer (fig.1, subscriber premises) (see col. 7, lines 47-50, the last mile delivery system connecting the central office 114 to subscribers premises 116 may be any communication channel capable of supporting the communication of compress digital

video, with the possible addition of bi-directional Internet data, PSTN services and/or POTS).

However, Kenworthyt is silent to disclosing the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM).

Christian discloses the SONET ring comprising an ingress Add-Drop multiplexer (ADM) (see figure 2, 116) and egress Add-Drop multiplexer (ADM) (see figure 2, 106) (see col. 7, lines 58-59, the peripheral equipment 106 is connected to SONET/SDH ring architecture supporting other interconned ADMs 114-116).

Both Kenworthyt and Christian disclose the SONET/SDH network. Christian recognizes the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kenworthyt with the teaching of Christian to provide the SONET ring comprising an ingress Add-Drop multiplexer (ADM) and egress Add-Drop multiplexer (ADM) in order to control the set-up and functionally of either directly connected or remote peripheral equipment within SONET/SDH environment.

However, the combined system (Kenworkthyt – Christian) are silent to disclosing the DSLAM to receive an Internet Group Management Protocol (IGMP) request message for a particular video channel based on at least one of a group address and a class-D internet protocol (IP) address provided by the IGMP request; the DSLAM further to receive, from the customer premise, a unicast request for a destination in the headend network, and to deliver the unicast request to the dedicated data network; and

the DSLAM further to receive, from the head-end network via the dedicated data network, unicast traffice whose intended destination is the customer premise, and to direct the unicast traffic to the customer premise.

Nguyen et al. discloses the DSLAM further to receive, from the head-end network via the dedicated data network, unicast traffice whose intended destination is the customer premise, and to direct the unicast traffic to the customer premise (see page 2, [0020], a video head end provides statically configured channels to a DSL access multiplexer (DSLAM) via an ATM network. The video channel are dynamically cross-connected to customer premise equipment (CPE) units as IP multicast video connections over ATM. Each CPE unit performs IPoATM to IP interfacing to provide IP multicasted video channels to one or more set-top boxes (STB). Each STB sends IGMP messages to the DSLAM to effect certain actions, such as joining or leaving a multicast group); comprising:

- the DSLAM further to receive, from the customer premise, a unicast request for a destination in the headend network, and to deliver the unicast request to the dedicated data network (see figure 1, figure 2, page 2, [0021], the STB 1 sends the DSLAM a Group Join message requesting to join the multicast group for channel 1);
- the DSLAM to receive an Internet Group Management Protocol (IGMP) request message for a particular video channel based on at least one of a group address and a class-D internet protocol (IP) address provided by the IGMP request (see page 3, [0022], whenever a DSLAM at a network node receives a Group Join

message, it compares the media access control (MAC) address of the originating STB to that of previous Leave message for which there are existing connections, i.e. pending Leave requests. If a match is found and "an available" no other STB is listening to the multicast group that has the matching pending leave).

Both Kenworkthyt, Christian, and Nguyen disclose the ring topology which carries broadcast traffic. Nguyen recognizes the DSLAM to receive an Internet Group Management Protocol (IGMP) request message for a particular video channel based on at least one of a group address and a class-D internet protocol (IP) address provided by the IGMP request; the DSLAM further to receive, from the customer premise, a unicast request for a destination in the headend network, and to deliver the unicast request to the dedicated data network; and the DSLAM further to receive, from the head-end network via the dedicated data network, unicast traffice whose intended destination is the customer premise, and to direct the unicast traffic to the customer premise. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Kenworkthyt – Christian) with the teaching of Nguyen to provide the DSLAM to receive an Internet Group Management Protocol (IGMP) request message for a particular video channel based on at least one of a group address and a class-D internet protocol (IP) address provided by the IGMP request; the DSLAM further to receive, from the customer premise, a unicast request for a destination in the headend network, and to deliver the unicast request to the dedicated data network; and the DSLAM further to receive, from the head-end network via the dedicated data network, unicast traffice whose intended destination is the customer

premise, and to direct the unicast traffic to the customer premise in order to improve technique of providing channel changing functionality under bandwidth limited conditions.

However, the combined system (Kenworkthyt – Christian – Nguyen) are silent to disclosing a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface.

Richardson (US 2004/0125818) discloses a digital subscriber line access multiplexer (DSLAM) having a line interface (see figure 2, ADSL port 22, 23, 24, 25, 26, 27, 28) and a network interface (see figure 2, ATM trunk port) , and to deliver the particular video channel from the network interface to the line interface (see page 2, [0024], the DSLAM of FIG. 2 is configured with an ATM trunk port and multiple destination ports 22-28. The ATM trunk port 21 is a single virtual path / virtual channel, illustratively assigned a VPI of 39 and a VCI of 12. In this exemplary ATM multicast / point-to-multipoint distribution information is delivered from the ATM trunk port 21 to multipoint destinations: ADSL port 22, ADSL port 23, ADSL port 24...ADSL port 28).

Both Kenworkthyt, Christian, Nguyen, and Richardson discloses multicasting (broadcast) for delivering information over a network. Richardson recognizes a digital subscriber line access multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Kenworkthyt – Christian – Nguyen) with the teaching of Richardson to provide a digital subscriber line access

multiplexer (DSLAM) having a line interface and a network interface, and to deliver the particular video channel from the network interface to the line interface in order to make efficient use of the network. Therefore, the combined system would have been enable to sending multiple copies of the same information to multiple destinations and does not constitute an efficient use of resources.

49. In the claim 18, Kenworkworthy discloses the ring topology only carries broadcast traffic (see abstract, system and end-to-end methods for delivering digital aggregated broadcast television programming from a centralized aggregation headend to subscribers in multiple markets using an interconnected terrestrial fiber optic network).

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

08/25/06

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